Designing hospital units to optimise outcomes

Improving hospital outcomes through Teamwork in an Accountable Care Unit

Emory Healthcare
Department of Nursing
Department of Medicine

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An interesting temporal relationship....

6G: # Deaths by Hospital Discharge Unit - Rolling 12 Month Avg

ACU
Learning Objectives

1. Describe the 4 features of an Accountable Care Unit (ACU)
2. Describe the 4 features of Structured Interdisciplinary Bedside Rounds (SIBR)
3. Describe the potential influence of an ACU-SIBR teamwork model on hospital outcomes
Accountable Care Unit (ACU)

definition: a geographic inpatient area consistently responsible for the clinical, service, and cost outcomes it produces

Average # floors per team: 8
- 8 units, 15 patients
- 8-15 different nurses
- Team? What team?
Accountable Care Unit (ACU) definition: a geographic inpatient area consistently responsible for the clinical, service, and cost outcomes it produces.
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Accountable Care Unit – 4 features

1. **Unit-based teams**: physicians by units, predictability, cohesiveness, communication
2. Patient-centered workflow: structured interdisciplinary bedside rounds (SIBR)
3. Performance data: unit-level rather than traditional facility or service level data
4. Partnered management: nurse unit director + physician unit director
### Accountable Care Unit – 4 features

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2. **Patient-centered workflow:** structured interdisciplinary bedside rounds (SIBR)
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4. **Partnered management:** nurse unit director + physician unit director
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<table>
<thead>
<tr>
<th>Table 2: Features of a resilient unit</th>
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<tbody>
<tr>
<td><strong>Resilience Mode</strong></td>
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<tr>
<td>---------------------</td>
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<tr>
<td>Foresight</td>
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<tr>
<td>Coping</td>
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<tr>
<td>Recovery</td>
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</tbody>
</table>

Jeffcott S, Stein J, Chadwick L
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Resilient ← Prevention ← Clinical Review ← Rapid Response ← ACLS → Brittle → Recovery → Worst has already happened

The Slippery Slope

Charles Pain, MD  
Clinical Excellence Commission  
New South Wales 2008
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3. Describe the potential influence of an ACU-SIBR teamwork model on hospital outcomes
Structured Interdisciplinary Bedside Rounds (SIBR)

1. Location: home unit, in the room, at the bedside
2. Time: consistent start time, <60 minutes
3. Management: SIBR manager calls next nurse, orients floaters
4. Content: standard script & checklist → order capture + plan-for-the-day

Please expedite discharges. EUH at capacity.
Structured Interdisciplinary Bedside Rounds (SIBR)

1. **Location**: home unit, in the room, at the bedside
2. **Time**: consistent start time, <60 minutes
3. **Management**: SIBR manager calls next nurse, orients floaters
4. **Content**: standard script, quality-safety checklist, order capture, plan-for-the-day

Please expedite discharges. EUH at capacity.
Structured Interdisciplinary Bedside Rounds (SIBR): Time Management

1. Welcome
   a. Lead team introduction, greet patient & family
   b. Introduce self, title & credentials

2. Updates
   a. Review patient’s status & response to treatment
   b. Review interdisciplinary care coordination
   c. Huddle with patient & family
   d. Update family

3. Planning
   a. Plan next steps
   b. Discharge & follow-up instructions
   c. Medication review

4. Review
   a. Review patient’s progress & response to treatment
   b. Review interdisciplinary care coordination
   c. Huddle with patient & family

5. Wrap-up
   a. Summarize key points
   b. Set expectations for next visit
   c. Discharge & follow-up instructions

Rounds Manager
Structured Interdisciplinary Bedside Rounds (SIBR): Role Clarity

1. Introduce
   a. Lead team into room and greet patient-family
   b. Say roles of team members & name of nurse
   ≤ 15 seconds

2a. Update status
   a. Active problem list & response to treatment
   b. Internal test results & consultant inputs
   c. Inputs from patient-family & nurse...
   ≤ 45 seconds

3. Checklist for Quality-Safety
   a. Overnight events & patient’s goal-for-the-day
   b. Vital signs & pain control
   c. Fluid & food intake
   d. Urine & bowel output
   e. Mental status & ADLs
   ≤ 15 seconds
Structured Interdisciplinary Bedside Rounds (SIBR): Role Clarity

2b. Update status
   a. Overnight events & patient’s goal-for-the-day
   b. Vital signs & pain control
   c. Fluid & food intake
   d. Urine & bowel output
   e. Mental status & ADLs
   ≤ 45 seconds

3. Checklist for Quality-Safety
   a. Foley catheter
   b. Central line
   c. VTE prophylaxis
   d. Pressure ulcer & stage
   ≤ 15 seconds

4. Promote teamwork & shared decision making
   a. Synthesize inputs into a Plan-for-the-Day
   b. Check for Discharge Planning
      i. Anticipated DC needs + next site-of-care
      ii. Discharge date + time-of-day
      iii. Follow-up appointment date + time
   ≤ 30 seconds

5. Re-direct to stay on time & teach as able
   a. Patient education
   b. Physical findings / pathophysiology
   ≤ 30 seconds
Structured Interdisciplinary Bedside Rounds (SIBR): Role Clarity

- **Enter orders in real-time**
  - a. Management decisions
  - b. Quality-Safety Checklists items

- **Workstation on Wheels (WOW) or Chart Cart**

- **Manage SIBR Rounds**
  - a. Ensure next bedside nurse ready for SIBR team
  - b. Orient float nurses
SIBR as a Core Competency

SIBR Team Ground Rules
1. We SIBR on all patients every day and begin & finish on time*
   (One exception: patients not yet evaluated by the provider team (typically patients new to the unit within 12-24 hrs)
2. All SIBR team members take positions inside the room*
3. SIBR may start for each patient only when the provider and nurse are both present
4. SIBR may end for each patient only after the plan-for-the-day is verbalized
5. We enter all new orders in real-time during SIBR

*We SIBR without the patient if the patient:
   a. is off the unit or otherwise indisposed
   b. prefers not to have the entire SIBR team in the room*
   X = SIBR outside the room occurs in a manner that preserves patient confidentiality

SIBR is Team-Based
Patient-and-Family Centered Care

Words We Use: 38%
Sounds we make: 55%
Nonverbal, Body language: 7%
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Outcomes

1. **Clinical**: morbidity & mortality  
2. **Education**: core competencies

ACGME Core Competencies - **Patient Care, Interpersonal and Communication Skills**, **Professionalism, and Systems Based Practice**, Medical Knowledge, & **Practice Based Learning**
Clinical outcomes

C.1. Emory ACU Performance to Date

C.1.a. In-hospital mortality. In our ACU pilot we have observed a striking 73% reduction in mortality. Compared to the 12-months before launching the first ACU, in the 12-months afterwards deaths on the general medicine unit decreased from 1.00 per 100 admissions to 0.27 (a 73% reduction; \( p = 0.005 \) based on a negative binomial regression). Mortality rates also declined in a concurrent control general medicine unit in another Emory hospital, from 0.80 per 100 admissions to 0.53 (a 34% reduction; \( p = 0.229 \)). The number of discharges to hospice did not change significantly in either unit. The number of admissions in the ACU increased from a mean of 131 to 146 per month (\( p=0.03 \)), while the number of admissions in the control unit decreased from a mean of 280 to 263 per month (\( p=0.03 \)).
Clinical outcomes

C.1.b. Hypoglycemia. The launch of the first ACU in September 2010 appears to have increased the yield from a glycemic control pilot which started in May 2010. Since the launch of the ACU the rate of hypoglycemic episodes has decreased from an average of 32.8 episodes/1000 patient days to 16.9 episodes/1000 patient days each month (p<0.001). The rate of hyperglycemic episodes decreased from an average of 196.1 episodes/1000 patient days to 160.7 episodes/1000 patient days each month (p<0.001). This preliminary analysis does not account for repeated measures.

Clinical outcomes

C.1.c. Hospital acquired infections. The incidence of central-line associated blood stream infections was 1/1000 patient days in the 12 months before the ACU and decreased to 0.1/1000 patient days in the following year (p = 0.011). There was no change in the incidence of catheter-associated urinary tract infections (from 1.7/1,000 to 1.8/1,000; p = 0.853).
Clinical outcomes

C.1.d. Teamwork. Using the Team Development Measure developed by PeaceHealth, before and after establishment of the first ACU we assessed changes in overall teamwork as well as changes in individual components of teamwork using Rasch analysis, as recommended by the developers of the survey. As shown in Table 3, overall team development improved from 54% to 76% (p=0.027). There was also improvement in the individual components of cohesiveness (62% to 83%, p = 0.013) and goals & means clarity (56% to 86%, p = 0.002) with a trend towards significant improvement in role clarity (33% to 0.63%, p = 0.053). Communication improved but the change was not significant (55% to 71%, p = 0.21). The findings show an improvement in team development temporally associated with the redesign of a medicine unit into an ACU.

Table 3: Teamwork measures

<table>
<thead>
<tr>
<th>Scale</th>
<th>Rasch Measure</th>
<th>Probability of agreeing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Overall</td>
<td>0.17</td>
<td>1.16</td>
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<tr>
<td>Cohesiveness</td>
<td>0.49</td>
<td>1.60</td>
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<tr>
<td>Communication</td>
<td>0.21</td>
<td>0.88</td>
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<tr>
<td>Role Clarity</td>
<td>-0.70</td>
<td>0.55</td>
</tr>
<tr>
<td>Goal &amp; Means Clarity</td>
<td>0.23</td>
<td>1.78</td>
</tr>
</tbody>
</table>

Education outcomes hypothesis

Practicing as a team-member...

- within a patient-centered, interdisciplinary care model coupled with coaching and feedback...
- increases teamwork skills and behaviors of practitioners and improves patient outcomes
Education outcomes

One Person’s Portfolio

Justified entrustment decisions

training 

deliberate professional practice

Ten Cate et al, submitted

Education outcomes

SIBR Certified

SIBR

Education outcomes

SIBR
Thank You

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